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TITLE:

BRACKET APPARATUS AND
METHOD FOR MOUNTING A
PERSONAL COMPUTING
APPLIANCE TO A WALL

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BRACKET APPARATUS AND METHOD FOR MOUNTING A PERSONAL COMPUTING APPLIANCE TO A WALL

5 FIELD OF THE INVENTION

This invention relates generally to the field of mechanical brackets and in particular, to a bracket apparatus and method for mounting a personal computing appliance to a wall.

BACKGROUND OF THE INVENTION

10 Conventional handheld computing devices such as, for example, the Palm Pilot manufactured and sold by 3Com Corporation, of Santa Clara, California, typically include a touch sensitive display screen and a stylus. These handheld computing devices are commonly referred to as personal digital assistants (PDA). The stylus for these PDA's is a writing utensil that
15 enables the operator to input data into the device via the display screen. The stylus is typically shaped like a small thin pencil or pen to allow the user to grasp and manipulate the stylus.

 In response to consumer demand and technological advances, other types of specialized computing devices have been designed to provide a
20 combination of PDA-like functions with more powerful applications, like full feature Internet conductivity and e-mail capability. These specialized computing devices are typically smaller than a conventional personal computer (PC), and yet larger than a conventional PDA. These specialized computing devices are oftentimes referred to as a personal computing
25 appliance (PCA). These devices may also be referred to as an Internet appliance (when provided with Internet capability) or electronic computing appliance. Typically these devices are relatively small (about the size of a sub-notebook) compared to conventional personal computers, have a relatively small footprint and, while more portable than many "portable
30 computers," are intended to be used as a countertop computing device.

A conventional PCA (which may be referred to as a household digital assistant) typically may include an outer housing, a central processing unit "CPU," computer readable program code, and a touch activated screen. A stylus is typically provided to allow a user to input data into the device via the display screen. In addition, a wireless keyboard may also be provided, which allows the user to input data into the PCA in a conventional manner.

As stated above, a conventional PCA may preferably be positioned on a countertop such as, for example, a kitchen countertop. The disadvantage of this arrangement is that the PCA and its associated keyboard, although relatively small, may nonetheless occupy a considerable amount of counter space, which typically is at a premium in most residential and commercial dwellings. As a result, when the device is not in use, and the occupied counter space is needed for other tasks, a user may have to move the appliance and store it in a different location. If this occurs, then the user must then retrieve the device from storage to use the device. Moreover, because the PCA, the keyboard, and the stylus are separate elements, they may be misplaced during the process of storing and retrieving the device.

Accordingly, it would be desirable to have a bracket apparatus that allows the PCA, keyboard, and stylus to be conveniently and quickly mounted to a wall without requiring any tools or fasteners. It would also be desirable to have a bracket apparatus that allows the keyboard to be positioned in either a stowed position when not in use or operating position during operation. Finally, it would be desirable to have a bracket apparatus that allows the stylus to be stowed along with the PCA.

SUMMARY OF THE INVENTION

One aspect of the invention provides a bracket apparatus including a bracket for retaining and supporting a personal computing appliance. The bracket is adapted to be mounted to a wall, and includes a wall mounting portion, a personal computing appliance mounting portion, and a plurality of mounting pads attached to the personal computing appliance mounting

portion for contacting and retaining the personal computing appliance. The plurality of mounting pads may preferably be comprised at least four mounting pads. Each of the plurality of mounting pads may preferably include a concave body portion. The plurality of mounting pads may preferably include

5 first and second side mounting pads for contacting first and second sides of the personal computing appliance. Each of the first and second side mounting pads may preferably be attached to a first end of the personal computing appliance mounting portion. The first side mounting pad may preferably be spaced apart from the second side mounting pad and may

10 preferably be positioned opposite the second side mounting pad. The plurality of mounting pads may preferably include third and fourth bottom mounting pads for contacting a bottom side of the personal computing appliance. Each of the third and fourth bottom mounting pads may preferably be attached to a second end of the personal computing appliance mounting

15 portion. The third bottom mounting pad may preferably be spaced apart from the fourth mounting pad.

The wall mounting portion may preferably include at least one planar flange member for contacting the wall. The at least one flange member may preferably include first and second planar flange members. The first planar

20 flange member may preferably be positioned along a first side of the wall mounting portion and the second planar member may preferably be positioned along a second side of the wall mounting portion. Each of the two flange planar members may preferably include at least one through opening. The at least one through opening may preferably include two openings. The

25 personal computing appliance mounting portion may preferably be angled with respect to the wall mounting portion. The personal computing appliance mounting portion may preferably be angled approximately 20 degrees with respect to the wall mounting portion. The wall mounting portion may preferably include a generally horizontal cross member extending from a first

30 side of the wall mounting portion to a second side of the wall mounting portion.

A keyboard holder for holding a keyboard may also be provided. The keyboard holder may preferably be rotatably attached to the bracket to allow the keyboard holder to be rotated between a stowed position and an
5 operating position. The keyboard holder may preferably include first and second keyboard mounting pads for contacting and retaining the keyboard. The first keyboard mounting pad may preferably be positioned along a first side of the keyboard holder and the second keyboard mounting pad may preferably be positioned along a second side of the keyboard holder. The
10 first keyboard mounting pad may preferably be positioned opposite the second keyboard mounting pad. The keyboard holder may preferably include a first rod member to allow the keyboard holder to be rotatably attached to the bracket. The first rod may preferably be attached to at least two of the plurality of mounting pads. The keyboard holder may preferably include a
15 second rod member to allow the keyboard holder to be locked in the operating position. The second rod may preferably be attached to the at least two of the plurality of mounting pads. The keyboard holder may preferably include a support member extending from the first side of the keyboard holder to the second side of the keyboard holder to allow the keyboard to be
20 positioned on the support member.

A stylus holder for holding a stylus may also be provided. The stylus holder may preferably be rotatably attached to the bracket to allow the stylus holder to be rotated between an unlatched position and a latched position. The stylus holder may preferably include a channel portion to receive and
25 retain the stylus. The stylus holder may preferably include a first rod member to allow the stylus holder to be rotatably attached to the bracket. The first rod member may preferably be attached to at least two of the plurality of mounting pads. The stylus holder may also preferably include a second rod member to allow the stylus holder to be locked in the latched position. The
30 second rod member may preferably be attached to the at least two of the plurality of mounting pads.

Another aspect of the invention provides a method of mounting a personal computing appliance to a wall. A bracket apparatus including a bracket is provided. The bracket is adapted to be mounted to a wall, and includes a wall mounting portion, a personal computing appliance mounting
5 portion, and a plurality of mounting pads attached to the personal computing appliance mounting portion. The bracket is mounted to the wall. The personal computing appliance is positioned between the plurality of mounting pads. The plurality of mounting pads is contacted against the personal computing device thereby retaining and supporting the personal computing
10 appliance. A keyboard holder for holding a keyboard may also be provided. The keyboard holder may preferably be rotatably attached to the bracket. The keyboard holder is rotated from a stowed position to an operating position and vice versa. A stylus holder for holding a stylus may also be provided. The stylus holder may preferably be attached to the bracket. The stylus holder
15 may preferably be rotated from an unlatched position to a latched position, and vice versa.

Another aspect of the invention provides an apparatus for mounting a personal computing appliance and keyboard to a wall. A bracket for retaining and supporting a personal computing appliance is provided. The bracket is
20 adapted to be mounted to a wall. The bracket includes a wall mounting portion, a personal computing appliance mounting portion, and a plurality of mounting pads attached to the personal computing appliance mounting portion for contacting and retaining the personal computing appliance. A keyboard holder for holding a keyboard is also provided. The keyboard
25 holder is rotatably attached to the bracket to allow the keyboard holder to be rotated between a stowed position and an operating position.

The invention provides the foregoing and other features, and the advantages of the invention will become further apparent from the following detailed description of the presently preferred embodiments, read in
30 conjunction with the accompanying drawings. The detailed description and drawings are merely illustrative of the invention and do not limit the scope of

the invention, which is defined by the appended claims and equivalents thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

5 **FIG. 1** is a perspective view of a preferred embodiment of a bracket apparatus, a keyboard holder, and a stylus holder, each of which is made in accordance with the invention;

FIG. 2 is a perspective view of the bracket apparatus of **FIG. 1** showing the keyboard holder or **FIG. 1** attached to the bracket apparatus wherein a
10 personal computing appliance is mounted onto the bracket apparatus and a keyboard is mounted onto the keyboard;

FIG. 3 is a side view of the embodiment of **FIG. 2** showing the keyboard holder in an operating position and a stowed position (in phantom); and

15 **FIG. 4** is a side view of the bracket apparatus of **FIG. 2** showing the stylus holder attached to the bracket apparatus wherein the stylus holder is shown in the unlatched position (in phantom).

DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENTS

20 Referring to **FIG. 1**, a preferred embodiment of a bracket apparatus is shown generally at numeral **10**. Referring to **FIGS. 1** and **2**, the bracket apparatus **10** includes a bracket **12** for retaining and supporting a personal computing appliance **14**. As shown in **FIG. 2**, the bracket **12** is adapted to be mounted to a wall **16**. The personal computing appliance **14** (which may be
25 referred to as a household digital assistant) may be any of the commercially available electronic devices having a central processing unit "CPU," computer readable program code, and a touch activated display screen.

 Referring again to **FIG. 1**, the bracket **12** includes a wall mounting portion **18**, a personal computing appliance mounting portion **20**, and a
30 plurality of mounting pads **22** attached to the personal computing appliance

mounting portion **20**. The wall mounting portion **18** provides a platform to allow the bracket **12** to be fastened to the wall **16**. As shown in **FIG.1**, the wall mounting portion **18** may preferably include a bottom portion **24**, a top portion **26**, a first side portion **28**, and a second side portion **30**. The wall mounting portion **18** may also include a generally horizontal cross member **32** extending from the first side portion **28** of the wall mounting portion **18** to the second side portion **30** of the wall mounting portion **18**. In the embodiment shown, the wall mounting portion **18** has a generally rectangular shape, although other shapes and configurations are contemplated.

Referring again to **FIG. 1**, the wall mounting portion **18** may also include at least one planar flange member **34**. In the embodiment shown, a second flange member **36** is also provided. The flange members **34**, **36** allow the bracket **12** to be mounted to the wall **16**. The flange member **34** is positioned along the first side portion **28** of the wall mounting portion **18** and the second planar member **36** is positioned along the second side portion **30** of the wall mounting portion **18**. Each of the flange members **34**, **36** may preferably have an arcuate shape, although other shapes and configurations are contemplated. Each of the two flange planar members **34**, **36** may preferably include at least one through opening **38** to receive a fastener (not shown). In the embodiment shown, each of the two planar flange members **34**, **36** may preferably include a second through opening **40**.

Referring again to **FIG. 1**, the personal computing appliance mounting portion **20** provides platform to allow the personal computing appliance **14** to be mounted to the bracket **12**. In the embodiment shown, the personal computing appliance mounting portion **20** includes a first top end **42**, a second bottom end **44**, and first and second sides **46**, **48**. In the embodiment shown, for example, the personal computing appliance mounting portion **20** is comprised of a pair of rod members **50**, **52**, each of which are attached to the top portion **26** of the wall mounting portion **18**. As shown in **FIGS. 3** and **4** the personal computing appliance mounting portion **20** is angled with respect to the wall mounting portion **18**. In particular, the personal computing appliance

mounting portion **20** is angled approximately **20** degrees with respect to the wall mounting portion **18** (see **FIG. 3**).

Referring again to **FIG. 1**, the plurality of mounting pads **22** are attached to the bracket **12**, and in particular, to the personal computing
5 appliance mounting portion **20**. As shown in **FIG. 2**, each of the plurality of mounting pads **22** contacts and retains the personal computing appliance **14**. Each of the plurality of mounting pads **22** may preferably be comprised of a flexible insulative material such as, for example, a thermoplastic rubber. The material should be rigid enough to hold the personal computing appliance **14**
10 firmly in place when installed. At the same time, the material should be flexible enough to allow the personal computing device **14** to be installed and removed without the use of any tools. In the embodiment shown in **FIG. 1**, the plurality of mounting pads **22** comprises at least four mounting pads, two side mounting pads **60, 62** and two bottom mounting pads **64, 66**. As shown
15 in **FIG. 2**, the first and second side mounting pads **60, 62** contact respective first and second sides **68, 70** of the personal computing appliance **14**. As shown in **FIG. 1**, each of the first and second side mounting pads **60, 62** is attached to the first top end **42** of the personal computing appliance mounting portion **20**. In particular, the first side mounting pad **60** is attached to a top
20 end **72** of rod member **50**, and the second side mounting pad **62** is attached to a top end **76** of rod member **52**. The first side mounting pad **60** is spaced apart from the second side mounting pad **62**, and the first side mounting pad **60** is positioned opposite the second side mounting pad **62**.

Referring again to **FIG.2**, the third and fourth bottom mounting pads
25 **64, 66** contacts a bottom side **80** of the personal computing appliance **14**. Referring to **FIG. 1**, each of the third and fourth bottom mounting pads **64, 66** is attached to the second bottom end **44** of the personal computing appliance mounting portion **20**. In particular, in the embodiment shown, the third bottom mounting pad **64** is attached to a bottom end **82** of rod member **50**, and the
30 fourth bottom mounting pad **66** is attached to a bottom end **86** of rod member **52**. The third bottom mounting pad **64** is spaced apart from the fourth

mounting pad **66**. Each of the plurality of mounting pads **22** may preferably include a concave body portion **88** to receive the personal computing appliance **14**. One advantage of the bracket **12** is that it allows the personal computing appliance **14** to be mounted to a vertical wall **16**. As a result, the personal computing appliance **14** does not occupy any valuable horizontal work surface such as, for example, a kitchen counter top. Moreover, the plurality mounting pads **22** allow the personal computing appliance **14** to be installed and removed without the use of any tools.

Referring again to **FIGS. 1** and **2**, a keyboard holder **100** for holding a keyboard **102** may also be provided. The keyboard holder **100** is rotatably attached to the bracket **12** to allow the keyboard **100** holder to be rotated between a stowed position and an operating position as shown in **FIG. 3**. The advantage of this arrangement is that the keyboard holder **100** can be rotated to the stowed position when the keyboard **102** is not in use. The keyboard holder **100** can also be rotated to the operating position when the keyboard is in use. In the embodiment shown in **FIGS. 1** and **3**, the keyboard holder **100** is rotatably attached to the third and fourth bottom mounting pads **64**, **66**. The keyboard holder **100** may preferably include a first rod member **104**. Referring to **FIG. 1**, the rod member **104** allows the keyboard holder **100** to be rotatably attached to the bracket **12**, and in particular, to the third and fourth bottom mounting pads **64**, **66**. In particular, one end portion **106** of the rod member **104** is press fit into an opening **108** formed in the fourth bottom mounting pad **66**. Similarly, a second end portion **110** of the rod member **104** is press fit into an opening **112** formed in the third bottom mounting pad **64**.

The keyboard holder **100** may also include a second rod member **114**. The second rod member **114** allows the keyboard holder **100** to be locked in the operating position. In the embodiment shown, the second rod member **114** is attached to the third and fourth bottom mounting pads **64**, **66**. In particular, the one end portion **116** of the second rod member **114** is press fit into a second opening **118** formed in the fourth bottom mounting pad **66**. Similarly, a second end portion **120** of the second rod member **114** is press fit

into a second opening (not shown) formed in the third bottom mounting pad
64.

As shown in **FIG. 1**, the keyboard holder **100** also includes first and
second keyboard mounting pads **130**, **132** for contacting and retaining the
5 keyboard **102** (see **FIG. 2**). Each of the first and second keyboard mounting
pads **130**, **132** may preferably be comprised of a flexible insulative material
such as, for example, a thermoplastic rubber. The material should be rigid
enough to hold the keyboard **102** firmly in place when installed. At the same
time, the material should be flexible enough to allow the keyboard **102** to be
10 installed and removed without the use of any tools. The first keyboard
mounting pad **130** is positioned along a first side **134** of the keyboard holder
100 and the second keyboard mounting pad **132** is positioned along a second
side **136** of the keyboard holder **100**. The first keyboard mounting pad **130** is
positioned opposite the second keyboard mounting pad **132**. The first
15 keyboard mounting pad **130** includes a concave surface (not shown) to
facilitate contact of the first keyboard mounting pad **130** with a first side **133**
of the keyboard **102**. Similarly, the second keyboard mounting pad **132** also
includes a concave surface **140** to facilitate contact of the second keyboard
mounting pad **132** with a second side **135** of the keyboard **102**. The
20 advantage of this arrangement is that the keyboard can be affixed to the
keyboard holder **100** without any fasteners or tools.

As shown in **FIG. 1**, the keyboard holder **100** includes a support
member **150** extending from the first side **134** of the keyboard holder **100** to
the second side **136** of the keyboard holder **100**. The support member **150**
25 allows the keyboard **102** to be positioned on the support member **150** when
the keyboard **102** is not in use. As shown in **FIG. 3**, the keyboard **102** may
preferably include a lip portion **152** engages that the support member **150**.

Referring again to **FIG. 1**, a stylus holder **160** for holding a stylus **162** may also be provided. The stylus holder **160** may preferably be rotatably attached to the bracket **12** to allow the stylus holder **160** to be rotated between an unlatched position (as shown in **FIG. 4**) when the stylus holder **160** is not needed to retain the stylus **162** and a latched position, when the stylus holder **160** is retaining the stylus **162**. The stylus holder **160** may preferably be attached to the bracket **14** in the same manner as the keyboard holder **100**. In particular, the stylus holder **160** may preferably includes a first rod member **164** to allow the stylus holder **160** to be rotatably attached to the bracket **12**, and in particular, to the third and fourth bottom mounting pads **64**, **66**. The stylus holder **160** may also include a second rod member **166** to allow the stylus holder **160** to be locked in the latched position. When in the latched position, the second rod member **166** may preferably be attached to the third and fourth bottom mounting pads **64**, **66**, just as the keyboard holder **100** is attached to the third and fourth bottom mounting pads **64**, **66** when the keyboard holder **100** is in the operating position. The stylus holder **160** may preferably include a channel portion **168** to receive and retain the stylus **162**. The advantage of this arrangement is that either the stylus holder **160** or the keyboard holder **100** may be attached to the bracket **12**, depending upon the particular application, without any need for separate fasteners or tools.

Referring to **FIGS. 2-4**, the personal computing appliance **14** can be mounted to the wall **16** above a work surface (not shown) by mounting the bracket **12** to the wall **16**. The personal computing appliance **14** may then be positioned between the plurality of mounting pads **22**. In particular, the bottom side **80** of the personal computing appliance **14** is positioned above the first and second side mounting pads **60**, **62**, and is lowered in a downward direction until the bottom side **80** of the personal computing appliance **14** contacts the third and fourth bottom mounting portions **64**, **66**. When the personal computing appliance **14** is fully inserted, the first and second side mounting pads **60**, **62** contact the respective first and second sides **68**, **70** of the personal computing appliance **14**. As a result, the bracket **12** retains and

supports the personal computing appliance **14**.

As shown in **FIG. 3**, the keyboard holder **100** may be rotatably attached to the bracket **12**. The keyboard **102** may then be positioned between the first and second keyboard mounting pads **130**, **132**. The first and second keyboard mounting pads **130**, **132** retain the keyboard **102** in a fixed position relative to the keyboard holder **100**. The keyboard holder **100** may then be rotated from a stowed position to an operating position to allow a user to operate the keyboard **102**. When the keyboard **102** is not in use, the keyboard holder **100** may be rotated from the operating position to the stowed position.

Alternatively, and referring to **FIGS. 1** and **4**, the stylus holder **160** may preferably be rotatably attached to the bracket **12**. The stylus holder **160** may preferably be rotated from an unlatched position (**FIG. 4**) to a latched position. Also, the stylus holder **160** may preferably be rotated from the latched position to the unlatched position. When the stylus holder **160** is in the latched position, the stylus **162** may be stowed within the channel portion **168** of the stylus holder **160** when the stylus **162** is not in use.

While the embodiments of the invention disclosed herein are presently considered to be preferred, various changes and modifications can be made without departing from the spirit and scope of the invention. The scope of the invention is indicated in the appended claims, and all changes that come within the meaning and range of equivalents are intended to be embraced therein.